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MISCELLANEOUS.

Acetanilid or Antifebrin.

BY L. L. AMES, M.D., RICHLAND, KAS.

There are some physicians who seem to be afraid of the above most valuable therapeutic agent. They seem to have no knowledge of its use or effect on the system.

A short time since I recommended the use of acetanilid to reduce a very high grade of fever in a case of infantile remittent. The doctor expressed great surprise at its being recommended to *reduce fever*. He had never heard of such a thing. He considered it a very dangerous remedy; in fact, he seemed to have no knowledge of the drug. Such objections, unfounded as they are and the result of the most supreme ignorance of one of the most valuable remedial agents given to modern therapeutics, is my excuse for writing this article.

Acetanilid or antifebrin is the result of the distilation of pure aniline with glacial acetic acid. It is unnecessary to describe the physical character of the drug. It has been long known to chemists, but only recently has it been introduced into medicine as a therapeutic agent. I find the first mention of it as a remedy in the United States in the Philadelphia *Medical and Surgical Reporter*, November 6, 1886, p. 601. However, it was used in Europe as early as 1880.

Its chief use, as its patented name (antifebrin) would suggest, is as an antipyretic.

Dr. Ernest Hensler, in the *Indiana Medical Journal*, July, 1887, says: "Antifebrin possesses remarkable power in controlling abnormally high temperature, but does not affect the temperature of healthy persons. With the lowering of the temperature there is also a decrease in the frequency of the pulse, *but an increase in volume*. I have tried antifebrin in cases of typhoid fever, pneumonia and pleuritis with good results."

Bartholow says: "The reduction of temperature takes place only when fever is present." He also says that as the pulse is lowered it is increased in volume.

Osler, professor of medicine, Johns Hopkins University, Baltimore, Md., recommends the use of acetanilid in the hectic fever of tuberculosis, pyæmia, and typhoid fever.

At the Ninth International Medical Congress held in Washington, D. C., in September, 1887, Prof. Austin Flint, in a paper entitled "Fever: Its Causes, Mechanism, and Rational Treatment," recommended acetanilid as a valuable agent as an antipyretic in typhoid and other fevers.

"At the Berne medical clinic experiments were made on 11 patients (8 with typhoid fever and 3 with phthisis) with 1,090 doses of antifebrin. These experiments have shown that continual antifebrinisation—as the administration of antifebrin in small, frequent doses is called—is an agreeable and mild method of antipyretics, possessing material advantages over the methods hitherto in vogue.

"The hectic of consumptives can be successfully combatted and relief be afforded to the patient by repeated doses of antifebrin. *The remedy acts better the higher the temperature.*"—Merch's Bulletin.

Dr. I. K. Murray, in an article to the *Lancet* of April 23, 1887, reprinted in *Medical and Surgical Reporter*, Philadelphia, May 7, 1887, p. 593, says: "Antifebrin seems much more powerful than quini

kairine, or antipyrin. It equals antipyrin in the duration of its effects, and in this respect surpasses quinine or kairine. It is only excelled in the quickness of its action by the external application of cold. Its effects are evident within an hour, and they last from ten to twelve hours when a full dose has been administered. When administered for a long time the dose must be increased.

"It produces profuse sweating and redness of the cheeks; it diminishes the pulse-rate, and distinctly increases arterial tension. I found no depressing effects follow its administration even when full doses were given."

The *Reporter* also reprints an article (Feb. 19, 1886) by Dr. Trushinhoff, of Russia, giving his experience with antifebrin in abdominal typhus, croupous pneumonia, and angina. He says: "Antifebrin rapidly lowers the febrile temperature, which falls to the standard within two hours, to keep at that level for one and a half to two hours; and then, after a slight rigor with coldness of the limbs, to rise again and reach the original height.

"The rapid fall and rise of temperature does not manifest any injurious influence on the heart, the pulse beating slower or more frequent according to the decrease and increase of the temperature, but never showing any other deviations from the normal.

"Even in the dose of from two to five grains, antifebrin produces slight perspiration, the formerly dry skin becoming moist.

"The drug acts also locally, since the tongue, which was formerly dry and thickly coated (e. g. in typhoid patients) becomes moist and red and stools normal. Administered as a gargle (one scruple of the drug to five ounces of water) antifebrin soothes and ultimately cures inflammation of the fauces and pharynx."

Professor Kutorscheski, of Karan, uses acetanilid in his clinic in typhoid. He says: "After a single four-grain dose, the temperature sank in the course of an hour 0.9° to 0.2° C., the reduced temperature persisting for from an hour and a half to three hours. It was found that by repeating these four-grain doses every two hours the temperature could be kept at the normal point all day. The frequency of the pulse was at the same time diminished and its tension increased.

"The patient likes the drug, and no ill effects were ever observed from its use."

In a report from the Royal Infirmary of Edinburgh will be found the following: "Antifebrin was introduced into the infirmary by Professor Granger Stewart shortly after the first account of its properties was published, and since then it has been used largely in more than one ward. The antipyretic qualities of the acetanilid have been most thoroughly tested, and it now occupies a high place among the febrifuge resources of the infirmary. Most especially it has been proved superior to antipyrin, kairine and thalin in its freedom from accompanying disadvantages, such as the production of vomiting, rigors and other discomforts at the various stages of its action."

We find by the above quotations the experience of the very highest medical authority that antifebrine is the most valuable antipyretic we have, and the plea that it is a depressing, debilitating remedy dangerous to use, is all bosh and nonsense.

It is a heart tonic and not a depressing remedy.

Dr. G. Walter Barr, of Bridgeport, Ill., in an article to the *Medical and Surgical Reporter*, Philadelphia, July 20, 1889, says: "Acetanilid acts on the pulse rate like digitalis, and on the arterioles like ergot. In acetanilid we have an agent that contracts the arterioles and slows the pulse rate, while at the same time it is a nerve tonic and produces a sense of well being in a marked degree and unlike depressents does no harm in the second or third stages of pneumonia."

Speaking of its use in pneumonia the doctor says: "I begin to use acetanilid in pneumonia in the first stage, to lessen the violence of the congestion and inflammation; in the second stage as a tonic and to keep down the fever—which causes death from hyperpyrexia and its changes—and at the same time to cause the products of retrograde metamorphoses to be better thrown off by the stimulated skin and kidneys; and in

the third stage because of its tonic action on the nervous system and digestive apparatus. The results of this treatment have been decidedly satisfactory. Although it is impossible to estimate might-have-been's, I have not the shadow of a doubt that it has lowered the death rate greatly; so much so that the disease has lost the terror it formerly had for me, and I look upon acetanilid in pneumonia as I do upon quinine in malaria."

In an article on the treatment of phthisis in *Reporter* May 14, 1887, Dr. C. H. Cauldwell says: "Antifebrin does not produce the unpleasant effects of quinine, salicylic acid, antipyrin, thalin or resorcin. Chills, collapse or semi-intoxication are not caused by it. In many patients it induces sweating. It diminishes the frequency of the pulse and usually strengthens the heart's action."

Another tribute is given to antifebrin as a heart tonic by Dr. E. Houston, of Stanbery, Mo., in an article to the *Medical Review*, April 7, 1888. He says: "He has obtained excellent results from antifebrin in inflammatory rheumatism, neuralgias, and as a hypnotic in insomnia due to reflex nervous phenomena in women. He has also given it in cases in which the extremities were cold and bathed in clammy sweat, temperature below normal and heart embarrassed. These symptoms, he says, disappeared in an hour. He regards it as a heart tonic."

I could continue quoting from the very best authorities all over the world, all speaking in the highest praise of antifebrin. I do not find a single word written condemning it, and I have the back numbers of many of the leading journals of the United States.

Antifebrin is used as an antipyretic, as a nervine, anodyne. and soporific, and in many other ways. It is used sometimes in heroic doses. In the *Medical Record*, December 1, 1888, Dr. Austin Flint communicates a case of sciatica treated by him with acetanilid at the Bellevue Hospital. "The pain was so severe that the patient had been confined to bed for three weeks. He had been treated with blisters, iodine, and a variety of other remedies before being admitted to the hospital, but with no relief. When admitted to the hospital antifebrin was given in as large doses as the patient could bear. Fifty grains were given in four hours. The patient became somewhat cyanotic, and a half ounce of whisky was given with the last dose. The patient was nearly but not entirely relieved. The next day the antifebrin was again given in the following doses: 10 A.M., 20 grains; 12 M., 20 grains —making 40 grains in two hours. It was not necessary to give whisky. The next day the pain was completely relieved, and the patient walked about the ward without difficulty. He promised to report in two days if the pain should return, but though two and a half months had elapsed up to the time Dr. Flint made his report nothing had been heard of the patient."

The cyanosis following the use of antifebrin is not a dangerous symptom. A little patient of mine, 8 years old, was given by the mistake of a druggist 15 grains. He became very much cyanosed, so much so that his tongue, lips and finger nails were blue. Of course the parents were very much frightened until I told them they need not be alarmed, that the little fellow was in no danger. The cyanosis was the only symptom of an abnormal character present; temperature normal, respiration free and easy, pulse full and regular. Cyanosis lasted about three hours, gradually disappearing.

Antifebrin is a most excellent remedy to reduce the after pains following labor. It is far better than any form of opium as it has no bad after effects. I have used it for this purpose for several years, and it never fails me. As it is tonic in its action, giving increased power to the heart's action, as testified to by our very highest authorities, it may be safely used in the most prostrated cases. My first experience with the drug was upon myself. It was administered to me by the above quoted Dr. E. Houston, of Stanbery, Mo., then at Marysville. I was in a typhoid condition as the result of the absorption of dissection poison. I had been at the time laying three weeks in a very critical condition, my family expecting I was about to join the great majority.

Dr. Houston was called. The first thing he gave me was antifebrin, 10 grains once in four hours, 60 grains in 24 hours. After 24 hours the pain and fever all left me and I improved rapidly.

As to the toxic effect of antifebrin, so far as I can find by a careful study of its history in the past, there has not been one death from its use, and from the ordinary medicinal dose, 10 to 15 grains, no bad symptoms have ever resulted. Dr. Simpson, of New York, took 100 grains in two and a half hours as an experiment. No bad effects followed.

A young man took 90 grains in four hours. Result was cyanosis, which soon passed away.

The *Medical and Surgical Reporter*, November 5, 1892, states as follows: "During the late influenza epidemic in Sweeden a great many cases of poisoning (or bad symptoms) occurred from the domestic use of antifebrin without the doctor's prescription. Although somewhat severe symptoms were observed in many cases, all ended in recovery."

One case reported by Dr. W. Warfing: a man aged 35 took two drachms of antifebrin. Another case, a girl of 15, took one-half ounce and did not die. Forty grains and two teaspoonsful (about one drachm) have been reported as being taken with no bad results.

There are but few remedies of decided value in our materia medica but what we should have to discard if we objected to them because dangerous symptoms followed their use in overdoses.

Quinine has produced deafness. It is a dangerous remedy to use in pregnancy as it is very liable to produce abortion. According to the reasoning of some physicians we must not use a drug because dangerous symptoms have been caused by an overdose, or by the idiosyncrasy of some patient. But the physician that studies antifebrin carefully will not be afraid of it, but will thank Heaven for an antipyretic that seldom fails him.

The Use of Sulphur in Surgery.

North American Practitioner.

At a recent meeting of the Royal Medical and Chirurgical Society of London Mr. W. Arbuthnot Lane presented a paper entitled "A Year's Experience in the Use of Sulphur in Surgery," in which he stated that in consequence of his losing a patient by iodoform poisoning he began a search for some material which like iodoform would produce powerful germicidal or inhibiting effects upon living tissues without possessing the poisonous elements which were sometimes witnessed in connection with the use of that drug. It occurred to him that as sulphur was destructive of organisms such as produce scabies, eczema, acne, and tinea tonsurans, probably by the formation of sulphurous acid; it might also, if placed in the tissues of the living body, result in the development of a germicidal agent capable of destroying organisms with which it might come in contact. In September, 1893, he first put it to the test in a case of extension with destructive disease of the hip-joint and with most satisfactory results. Since that time he had abundant opportunity to test its value not only in tubercular affections of the bones and joints but also in cases of gangrene, traumatic infection, carbuncle, etc. He arrives at the conclusions, that neither sulphur nor its products are in anywise prejudicial to health or harmful to tissues into which it is introduced; that within twenty-four hours after its application the affected parts are rendered sterile so far as organisms are concerned; that it may be applied with benefit to indolent and granulating surfaces; that it was destructive of all organisms with which it came in contact and was painless in its action, sulphur in substance being preferable to sulphurous acid, as it undergoes slow oxidation in the tissues, ensuring a more prolonged and permanent action, and by still futher oxidization generating sulphuric acid as well, and thus enhancing its efficiency.

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Topeka, Kansas, Saturday, March 16, 1895.

Private Dispensing.

So much has been and is being said about the evil of substitution that some definite conclusion ought soon to be arrived at. No physician who does a large prescription business can afford to have his druggist treat his judgment, as to the preparation he wishes to use, with disrespect. There are, perhaps, times when substitution may be innocent of any serious results, but that is still no excuse for the evil; and where the evil exists and is recognized physicians should not be blamed for attempting to protect themselves.

The old objections to dispensing medicine is in a great measure met by the convenient forms in which various combinations are now prepared by the manufacturers. These firms are beginning to recognize the growing tendency among physicians to dispense their own medicines, and many of the larger firms are now placing their preparations directly in the hands of physicians. The occupation of the prescription clerk is gradually being replaced by the manufacturer.

Prescriptions which were formerly compounded by the druggist are now in most instances found already prepared in pleasant elixirs or tablets.

A most vital question for the physician to consider is the relative profit to him of prescription writing and dispensing. Many of the phpsician's customers are people whose means are limited. If they are called upon to pay the druggist for the medicine the doctor must wait, while if he furnish his own medicine he is more likely to get some cash for his services. In many towns and cities physicians do their own dispensing, and this is almost universally the case with homeopaths. Those who have adopted this plan claim they get more satisfactory results from their treatment, they realize more money in their business, and their prescriptions are not placed on file with the druggist for the perpetual use of the patient and all his friends. Prescriptions are frequently peddled around in a neighborhood with a promiscuous application to every sort of illness, to the damage of the physician and often with mischief to the individual taking it. Patients often inform their physicians that they found his prescription so good they had recommended it to their friends. While this may flatter the physician's vanity, it is hardly a kindness to thus cheat him out of a fee. People are usually more willing to pay for a box of tablets or bottle of medicine than for a recipe which costs them probably as much more to get filled.

That some change is coming in the present mode of doing business all seem to recognize. Whether the physician will do his own dispensing or what plan will be most popular will depend considerably on the locality. The country practitioner will, as he generally does now, keep his own supplies. For cities we have heard a plan suggested which seems a very feasible one. That-

the founding of dispensaries in different parts of the city for the accommodation of a certain number of physicians, the dispensary to be owned and controlled by the physicians. This possibly does not relieve the physician as completely as a private dispensary, yet it would have the advantage of convenience and be free from the objectionable features of the retail druggist, who prescribes for your patient, alters your prescriptions, and refills them as many times and for as many people as he may have calls.

Committee of Arrangements Kansas Medical Society.

The committee of arrangements for the meeting May 16 and 17 is composed of the following physicians: Dr. M. B. Ward, chairman; Drs. S. G. Stewart, J. R. Fay, W. E. McVey and R. S. Magee. Dr. W. E. McVey was selected to act as secretary for the committee. Arrangements will be made for exhibitors, and friends in the pharmaceutical or instrument line who wish to satisfy the curiosity of the members should apply to the secretary of the committee for information and a plan of the hall. Representative hall has been secured, and there are some excellent anterooms which will be used for exhibitors. A large attendance is expected, and a fine program will soon be announced.

To Increase Labor Pains.

Drs. Tyler & Tyler, of Clifton, Kas., give four grains of quinine every half to an hour until fifteen or twenty grains is taken, if necessary, to increase the contraction of the uterus where there is inertia at the beginning of the second stage of labor. They claim good results from this practice and no evil effects from the use of such doses of quinine.

Kansas Medical Society.

TOPEKA, KAS., March 1, 1895.

DEAR DOCTOR—The 29th annual meeting of the Kansas Medical Society will be held in the hall of the House of Representatives, Topeka, on May 16 and 17, 1895. There are a great number of physicians in the State who are not members of the Society. If you are one of those, be sure and arrange your business so that you can attend and join the society. The papers read before this society in the past are the peers of any read elsewhere, and the program this year promises to be the best we ever had, including the names of prominent men in the State and from abroad. Among those from abroad will be Drs. J. B. Murphy and Franklin H. Martin, of Chicago, and others. Don't forget the date, and take your vacation by coming to this meeting.

Very respectfully,

G. A. WALL, M.D.,

Corresponding Secretary.

P. S.—We are promised rates over the various railroads for the meeting.

BUCKLEY recommends sulphate of sparteine and apocynin in dosimetric doses to relieve dropsical conditions and improve the circulation. He claims they do not disorder the stomach, but on the other hand the latter drug improves the condition of the stomach.

REMEMBER that we will furnish you the JOURNAL for one year and Helbing's Modern Materia Medica for $2.50.

LOEFLER claims that menthol is antiseptic in diphtheria, and is curative if applied in ten per cent. solution.

FL. EXT. cimicifuga in 10 to 30-drop doses is highly recommended for seminal emissions.

Central Branch Medical Society.

TOPICS DISCUSSED.

Diphtheria Antitoxine.

Treatment of Pneumonia, and What Caused the Acceleration of the Pulse in Pneumonia, and How the Rales were Produced.

The Central Branch Medical Society met in the parlor of the Pomeroy House, Greenleaf, March 7, 1895, President A. H. Andrews in the chair.

Present: Drs. A. S. Andrews, J. H. Greene and Wm. Jacobs, of Washington; G. W. Moore, of Palmer. D. W. Humfreville and C. W. Hardy, of Waterville; H. M. Ochiltree, of Haddam; W. M. Droll, of Parallel; F. S. Stapleton, of Linn; A. L. Roseborough, of Barnes; M. N. Gardner, of Greenleaf, and S. E. Sheldon and John E. Minney, of Topeka.

Dr. Gardner was elected secretary *pro tem.* Dr. Green having to go home on account of indisposition.

Dr. Gardner gave a verbal report on "Diphtheria Antitoxine." He said we were living in an age of discovery. We have hardly gotten over the tuberculin craze with its disappointment until the market is flooded with all the various ines—cerebrine, peptonzyme, testine, etc., and numerous new pharmaceutical preparations are claiming our attention. While we are doomed to disappointment in many of them, yet this is in the line of progress and will result in good. Diphtheria antitoxine is attracting the greatest attention. We have had no personal experience with the agent and our knowledge of its virtue is obtained from journals, hospital reports, etc. These reports are favorable, although the profession at large has not accepted the claim in full of the curative properties reported. We believe the claim for its therapeutic value is gaining ground, and if hospital and other statistics are at all reliable, we have great hope for good results in the treatment and prevention of diphtheria by the use of antitoxines. Here the doctor gave the statistics from various sources, commenting on them, and showing that the per cent. of mortality had been reduced more than one-half by the use of them. The doctor gave great credit to the experimenters and to the pharmacists who were doing so much in discovery and in preparing palatable, reliable therapeutic agents for the medical profession.

Dr. Humfreville did not wholly disbelieve in the antitoxine theory, but thought we should be careful and note the origin of these statistics showing such glowing successes. In the main he thought they were from antitoxine firms who had these preparations for sale.

Dr. Gardner showed that while the firms had sent out the literature that it had been taken from the medical experimenters and from medical journals having no pecuniary interest in the sale of antitoxine, and hence were reliable so far as honesty of investigation and purpose were concerned.

Dr. Andrews: The antitoxine treatment, I believe, will prove to be a fake.

Dr. Minney thought that the principle was correct. He evidenced the result of vaccination in smallpox, showing what animal virus had done, and thought similar good results might be obtained by inoculation when properly understood. This might be said in favor of the reduced mortality in the cases reported by the use of the diphtheria antitoxine, that the patients were let alone and supported and not drugged to death as they were when antitoxine was not used. The nuclein, supporting treatment and rest all favored a lower mortality than active interference. He believed that the antitoxine like the tuberculin and testicular fluids had a place in therapy, but they would be very limited in their range of usefulness.

Dr. Gardner, in closing, said the principle was that of immunization as well as curative in a measure, like one attack of typhoid fever is in a measure preventive of another.

Dr. Morton then read a paper on "Pneumonia."

Discussion.—Dr. Humfreville: There appears to be a relationship existing between

pneumonia and lagrippe. The pneumonia antitoxine was used in one case of pneumonia coming under my observation and the patient died. I usually give tonic doses of quinine, and to relieve the nervous symptoms, especially in children, bromide of potassium, and meet the indications as they arise.

Dr. Gardner: In the acute stages of pneumonia I use small doses of aconite, a fly blister over the region of pain, and small doses of quinine as a tonic; and in the later stage stimulants and digitalis.

Dr. Droll: Pneumonia cannot be aborted. Gentle laxatives should be given in the beginning of the disease to assist in removing the pneumonic poison. Codeine and morphine to relieve the pain and cough, and in children bromide of potassium. Strychnia and nitro-glycerine as a heart tonic in the late stage. In one case I feel that the life of the patient was saved by nitro-glycerine. In answer to the question what produces the increased heart's action, Drs. Gardner, Droll and Sheldon thought in the main it was due to the pneumonic poison, and the obstruction in the lung was a secondary consideration.

Dr. Sheldon: Vaccination should not be compared to the antitoxine. The former gives immunity and the latter does not, or at least to a feeble extent. The serum should be used with care. The horse is susceptible to disease, and hence the danger of communication.

The next meeting of the society will be held in Greenleaf. Dr. Andrews will prepare a paper on pneumonia with a view of determining the cause of the increased pulse rate, the exhaustion of the heart and the production of the crepitant and subcrepitant rales.

Dr. Minney will prepare a paper on "The Retinitis Albuminurica of Pregnancy."

This society is a wide awake progressive one, and the Pomeroy House deserves the patronage it receives. It gives half rates to physicians.

The Manufacture of Fluid Extracts.

C. H. Daggett, Ph.G. (in charge of Laboratory of George L. Clafflin & Co., Providence, R. I.) in The Atlantic Medical Weekly.

Fluid extracts are liquid alcoholic preparations of a definite standard strength, made by percolating the drug contained in a percolator with the proper menstruum, so that in the finished product one cubic centimeter represents the strength of one gramme of the drug. They were made officinal in the United States Pharmacopœia of 1850 for the first time, and have been in constant use since.

The advantage possessed by them is:

1. Permanence (which is secured by the presence of alcoholic menstruum).

2. Concentration (which enables the physician to decrease the bulk of the dose.

3. The uniform relation existing between the finished fluid extract and the drug.

They are made as follows:

1. Percolation with partial evaporation (official).

2. Percolation with incomplete exhaustion.

3. Repercolation.

4. Percolation and maceration with hydraulic pressure.

5. Vacuum percolation with maceration.

Percolation by partial evaporation:

One thousand grammes of the powdered drug are moistened with a sufficient quantity of menstruum, packed in a percolator and enough menstruum added to saturate the powder and leave a stratum above it; the lower orifice of the percolator is closed when the liquid begins to drop, and the percolator is closely covered to prevent evaporation and permit maceration for a specified time (usually for forty-eight hours); additional menstruum is poured on and percolation continued to exhaustion. Usually from seven to nine-tenths of the first portion of the percolate is reserved and the remainder evaporated at a temperature not exceeding 50° C. (122° F.) to a soft extract; this is to be dissolved in the reserve portion, and enough menstruum added to make the fluid

extract measure 1,000 cubic centimeters.

In manufacturing on the large scale, many manufacturers recover by distillation the alcohol lost in evaporating, and if not performed by a skillful operator the extract is overheated (sometimes burned) and rendered unfit for use, thereby reducing the strength of the fluid extract.

If the alcohol is not recovered a great loss is sustained, increasing the cost of the preparation.

Percolation with incomplete exhaustion:

This process consists in percolating a given weight of drug with the given weight of menstruum in the usual manner, and stopping percolation where an amount of percolate has been obtained which is equal to about three-quarters the weight of the drug. The residue containing menstruum is thrown away.

The strength of the finished product by this method depends entirely on the carefulness of the operator. In one case he may obtain 72 per cent. of the active principles in the first 75 per cent. of percolate, and in another not more than 50 per cent., or even less. In this process great care must be exercised in packing the percolator; if too loose, the menstruum will pass through the drug without extracting all of the active principles; if packed with an uneven pressure, the menstruum may pass through a portion of the drug and not be able to penetrate the rest, thereby making the fluid extract below the required standard of strength. Again by this method we have considerable loss.

Percolation and maceration with hydraulic pressure:

This consists in macerating the drug in a percolator with the proper menstruum for four days and percolating until dropping ceases. The upper stratum, amounting to about one-fifth of the drug, is then removed, placed in a canvas bag or sack and subjected to hydraulic pressure. The fluid obtained is poured upon the moist drug in the percolator, and when percolation has ceased a second portion of the moist drug is taken trom the percolator, pressed out as before and this process repeated until all the drug has been pressed out. The fluid obtained by the last pressing, together with the reserved percolates, constitutes the finished fluid extract.

For manufacturing fluid extracts on a large scale, this is a good method but is not devoid of some disadvantages.

Vacuum maceration with percolation:

The drug reduced to the requisite fineness is placed in a percolator or strong cylinder, connected with an air pump. The air is exhausted by the pump, and through a siphon the requisite amount of menstruum is sucked into the vacuum chamber. The air enclosed in the enstices and pores of the drug is thus expelled and the menstruum is brought in immediate contact with all parts of the drug, thereby facilitating maceration. Many manufacturers using this method after exhausting the drug recover the alcohol by distillation and there is the same liability of rendering the extract inert as before stated.

Repercolation:

I am constantly employing this method in the laboratory of George L. Claflin & Co., and consider it by far the best. It is the method used and originated by Dr. Squibb, and surely no one can doubt or question the quality of his fluids.

It consists in passing the undersaturated, or weaker percolate, from a portion of the drug through another portion, and again passing the undersaturated, or weaker percolate, from the second portion through a third portion, and so on.

The method of procedure I use is as follows:

One hundred pounds (or any convenient quantity as the case may be) of drug of the required fineness are placed in a percolator and moistened with the required menstruum, leaving a stratum above it; it is closely covered and allowed to macerate for forty-eight hours; percolation is started and more menstruum is added and the drug exhausted. The first 80 per cent. of the percolate is reserved as finished fluid extract; the reason for reserving 80 per cent. is because, in starting with a menstruum which is unsaturated, if the full quantity in pints equal to the weight of the drug in pounds was reserved, a weaker fluid would be obtained on

account of the menstruum not being able to take up all of the active ingredients. After saving the first 80 per cent. as finished product, the remainder is reserved in portions of 25 pints each in the case of 100 pounds of drug being used, and placed in suitable containers. When the fluid is to be again made, 100 pounds of drug as before is moistened with the first reserve of 25 pints from the last percolate and allowed to macerate as before for forty-eight hours. Percolation is again started, using the reserves in the respective order, 2, 3, 4, etc., and enough of the original menstruum for complete exhaustion. When the drug is percolated with reserves from previous percolations in the case of 100 pounds, the first 100 pints are saved as finished fluid extract because the reserve is of course partially saturated with the active principles, and in passing through the drug becomes wholly so. Reserves of 25 pints each are saved as in the previous case, and placed one side for later use.

After exhausting the drug, the residue is placed in a press having a pressure of 2,500 pounds and the saturated menstruum so obtained is added to the reserves, the alcohol remaining in the drug being recovered by distillation.

I consider this the best method to secure a full strength fluid, because exhaustion is complete and your finished preparation will be sure to have the required results if a good drug has been used. I use a selected drug previously assayed, and one that is ground to the required fineness. Many are not particular to have a drug ground to the required fineness. If a No. 60 powder is required, a No. 40 will not answer the purpose, because there is not as much surface exposed to the action of the solvent; the fineness of the powder is dependent on the character and solubility of the active ingredients.

There has been considerable controversy in pharmaceutical journals concerning making preparations from fluid extracts. A tincture made from a fluid extract is equally as good as one made by percolation (as conducted by many pharmacists) if the fluid is known to be made by some reputable manufacturer and is of a known strength, for this reason: sufficient care is not always used in selecting the drugs, having them of the required fineness, packing the percolator and conducting the process of percolation, thereby obtaining a preparation not up to the U. S. P. requirements. For the retail pharmacist the process of making fluid extracts is not practical or profitable, because he does not have the time or facilities for their preparation. Fluid extracts to be kept for a long time should be placed away from the light and not exposed to the air any more than possible. The manufacture of fluid extracts is one that requires care and experience, and can only be made profitable when they are prepared in large quantities.

The Treatment of Bleeding from the Nose.

The New York Medical Journal.

Dr. Baumgarten, of Budapest, recommends the following methods in the treatment of epistaxis: A thorough examination of the inside of the nose must be made in order to discover where the bleeding comes from. Usually there are to be seen at the anterior part of the septum, rarely elsewhere, one or more small superficial vessels of a red color, or else little nodules, erosions, and varicose veins, or a small empty vessel looking blackish on a red background. Occasionally the hemorrhagic spot is covered with fresh blood crusts which must be softened and carefully raised in order to expose the appearances referred to. If there is nothing of a suspicious nature to be seen, the patient must be made to blow his nose several times. Another method is to apply a tampon of wet cotton to the septum, and press it more and more firmly against the place until the morbid spot bleeds. Sometimes this brings on at once a more abundant hemorrhage, which makes the continued application of the tampon necessary before the bleeding spot can be destroyed. For this destruction the author has used the gal-

vanic cautery or chromic acid, sometimes both. He touches the spot with the cautery, which is very painful, and the wire loop cannot always be withdrawn while it is still red, so that the eschar is apt to be removed at the same time. Then the small wound bleeds feebly, and it should be cauterized with chromic acid, which, according to Dr. Bresgen is an excellent hæmostatic.

When operating on children or on timid persons Dr. Baumgarten uses the chromic acid only, but the cauterization must be repeated two or more times after the eschar has fallen or after a fresh hemorrhage. This treatment must be continued until a plainly visible cicatrix is produced. The patient must be told not to scratch the eschar, to apply a little oil or grease to the spot, to keep quiet, to avoid handling his nose, and not to blow it too hard. Sometimes sneezing occurs, and this may bring on a hemorrhage through the eschar. In this case the application must be renewed. A hemorrhage must always be arrested before cauterizing the spot from which it proceeds. After the source of the hemorrhage has been ascertained the spot is washed with warm water, the nostril is dilated, and as large a tampon as possible is inserted, against which the wing of the nostril is pressed with the finger. That generally suffices, as nearly all forms of epistaxis have their origin in the forepart of the nasal passages, but the patient must hold himself erect and remain quiet. After this pressure has been continued for a moment the tampon is slowly withdrawn in order to find the origin of the hemorrhage. A second tampon is then pressed against the spot. The epistaxis is thus often arrested. Afterward the place may be cauterized with chromic acid. The author has often succeeded in covering the bloody points with a layer of chromic acid by pushing the tampon forward very gently; it cannot always be removed immediately, because the wound will bleed anew, and it must be left until the following day or longer, if necessary. The author, however, has never had to repeat this for more than three days. He always uses cotton saturated with carbolic acid or some other aseptic cotton, but never iron perchloride, as that only cauterizes. If the blood runs through the tampon or into the pharynx, the physician should use the same means as those employed in the more serious hemorrhages. After the part has been washed with warm water, a strip of iodoform gauze as wide as a finger should be pushed as far as the choana; then the entire nasal fossa should be packed with the same material. This may be done easily and without pain; it is better than Belloq's method, and may be accomplished even with a contracted nostril. With regard to Belloq's method, Dr. Baumgarten thinks it is not sufficient and that it may produce accidents to the ear, etc. In one case, that of an old man who was the subject of advanced arteriosclerosis, Belloq's tampon was inserted, and several tampons were added anteriorly. Two physicians had tried to stop the bleeding, but their efforts had been of no avail. The velum of the palate had been cut, and it was ulcerated and œdematous. The author, who was called in, immediately removed everything, and while the bleeding continued he applied strips of iodoform gauze, and two days afterward the hemorrhage was arrested. As a palliative method, or in cases where the anterior tampon is not efficacious, or where the patient is taking care of himself pending the physician's arrival, the author recommends the use of warm water, which is a better hæmostatic than cold water or ice water, or else lemon juice. A solution of iron perchloride is an excellent hæmostatic, he says, but it cauterizes the neighboring region and prevents the physician from distinguishing the diseased spot. When the hemorrhage finally stops and the bleeding points are found, they must be cauterized. There is no harm in cauterizing somewhat around the bleeding spot; on the contrary, the indications are to burn the entire vicinity. In cases of arteriosclerosis the author has been obliged to cauterize the entire pituitary surface as far as the choana as the iodoformed strips were removed one after another. These cauterizations should be repeated several times, and every suspected place covered anew with chromic

acid. These tampons of iodoform gauze are not disagreeable to the patient, and they may be left for two days. Before removing them the nose should be washed with warm water, and the strips of gauze should be drawn away very gently in order to prevent the hemorrhage from breaking out again, and any suspected places immediately cauterized, even at the risk of touching a healthy spot. The patient may take wine and iron, but should avoid coffee, tea, and effervescing drinks. All internal medicines are useless and harmful.

Our Materia Medica.

Medical Record.

The discussion upon the subject of materia medica and therapeutics held before the Academy recently, was one of great practical interest, and it will, we trust, be productive of good to the profession at large as well as the student.

The conclusion which one reaches from reading the remarks of the speakers is, that we have too many drugs, too many preparations of drugs, and too much teaching of materia medica. This leads to evils in many directions. The druggist is obliged to encumber himself with much useless and expensive material; the student has to load his already burdened memory with a mass of useless botanical or pharmaceutical facts, and the practitioner is so embarrassed with his richness of material that he speedily forgets a large part of his materia medica, and settles down to certain routine remedies which chance successes rather than ripe experience and good judgment select.

We hear, almost with amazement, of the countless preparations of iron, mercury, and cathartics which are officinal, and the names of which are drilled into the students during the "cram quizz." The endless list of antipyretics, analgesics, hypnotics, and antiseptics which modern chemistry supplies, makes the task of learning materia medica still greater.

The remedy is largely in the hands of the teachers, and those who provide our pharmacopœia. One of the easiest and simplest measures is that of dropping many of the unnecessary preparations of drugs. Mercury or iron can easily be given in half a dozen forms, and many of the officinal cathartics are simply of legendary value.

The dropping of special drugs from the list is a matter of more difficulty, yet something can be done in this direction. An analysis of prescriptions shows that the number of drugs in actual use is not very great, and by a large and comprehensive examination of the drugs in actual use, many superfluities can be eliminated.

Study Upon Mercurial Frictions.

Journal of Cutaneous and Genito-Urinary Diseases.

Dr. Cathelinean has just undertaken, in the service of Prof. Fournier, at the St. Louis Hospital, a whole series of experimental researches, to enable him to determine the manner in which mercurial frictions act upon the organism. It is well known that several hypotheses have been advanced on the subject.

According to some the mercury penetrates directly through the skin in a state of extreme subdivision. This theory has been vigorously assailed in recent times. For others the mercury penetrates the organism under the form of soluble absorbable compounds produced by the chemical action of the fatty bodies of the ointment base or the products of secretion of the skin. For others it penetrates under the form of mercurial vapors formed in the hair follicles and sebaceous gland follicles which the inunctions have filled with mercury. For others, finally, the mercury penetrates in the state of vayor by pulmonary inhalation, and this is indeed the best demonstrated fact up to the present time. Every individual subjected to the process lives, perforce, in an atmosphere where the mercury of the ointment continually emits vapors which are given off to the surrounding air, and decisive experiments have shown that it suffices

to place an individual in a medium saturated with mercurial vapors in order to find mercury in his secretion, and in order to have it act upon syphilitic manifestations. Studying the emitting power of the various mercurial preparations from the standpoint of mercurial vapors, the author has become convinced that the pomades made with lanoline, vaseline and lard have a vaporizing power much inferior to that of mercurial chalk or of mercurial flannels. Knowing this power of vaporization of Neapolitan ointment, the author has sought the quantity of mercury contained in the urine of patients subjected to inunction. It must be admitted that all the mercury volatilized has not been absorbed by the patient, since we find some in the urine of those about the patient. Furthermore, a portion of the volatilized mercury becomes fixed in the organism; it is eliminated, besides, by the saliva and the bowels. It results that we should find in the urine of patients a quantity of mercury much inferior to the quantity volatilized. Now, it is the opposite of this that the chemical researches demonstrate. The urine of twenty-four hours contains always a quantity of mercury larger than that which ten grammes of ointment used in friction would emit in the same period of time. Now, only four grammes of ointment were employed in the inunctions made. These researches demonstrate, therefore, in the most irrefutable manner that when we employ mercurial inunction the mercury does not penetrate alone by the way of the lungs into the economy.

Behring's Serum in the Treatment of Diphtheria.

Medico Surgical Bulletin.

Widerhofer gives the result of 100 cases of diphtheria treated by him with Behring's antitoxine. He selected some very severe cases and frequently did not use the serum till after the third or fourth day of the disease. His mortality was 24 per cent. less than half the usual mortality. He arrives at the following conclusions:

1. There is no doubt that in certain forms of diphtheria and by no means only in slight cases, Behring's antitoxine exerts such a favorable influence that no other mode of treatment can commence to compare with it.

2. Diphtheria cases presenting the gravest symptoms, where the serum is used during the first three days, are those in which the most favorable result is noticed; the cases, however, must be those of pure diphtheria, not mixed infection, contaminated with other bacteria, especially streptococci.

3. Behring is undoubtedly correct when he says: "Beyond the third or fourth day the action of the serum becomes dubious, but this does not mean that its trial would be useless."

4. In such cases where the diphtheritic poison had attacked the larynx, favorable results were frequently noticed even after commencement of stenosis. Where, however, the disease had already descended below the larynx good results were seen only in a few cases; and in affections of the small bronchi or in catarrhal pneumonias no favorable action could be attained.

5. The investigations show that Behring's serum treatment will considerably lower the mortality in diphtheria.

6. Injurious influences consequent upon the use of serum could not be discovered with any degree of certainty.

7. The sequelæ are found after serum treatment the same as without the treatment, though the frequency of paralyses seems to be somewhat diminished.

8. The local injury done by the injection is extremely small, nothing more than a slight redness or suffusion or perhaps a small abscess may develop.

Alcohol in Pneumonia.

Julius Pohlman, M.D., in Medical News.

The effect of alcohol upon nearly all the organs of the body has been carefully investigated. But, strange to say, literature contains only a few straggling hints upon the action of alcohol on the pulmonary tis-

sue. It has long been known that the abuse of alcohol is a predisposing cause of death when the drinker is attacked with pneumonia. No experimental evidence has been published of the action of alcohol in producing pathological conditions in the lungs. In order to determine this action a series of experiments upon dogs was made in the winter of 1890, 1891, 1892 and 1893. The dogs were a mixed lot of mongrels gathered in by the city dog catchers. They varied in weight from 15 to twenty-five pounds and were apparently in good health. In all thirty animals were experimented on.

The experiments were performed as follows: A carefully etherized animal had injected into his trachea just below the larynx a quantity of commercial alcohol varying from one dram to one ounce in amount. The effects of equal amounts of alcohol upon animals of the same weight varies greatly. Two dogs, weighing twenty-five pounds each, were injected with two drams of alcohol. One died in one hour and the other in six hours after the injection. Four other dogs, two weighing twenty-four pounds each, another eighteen pounds, and the fourth fifteen pounds, were all injected with the same amount, two drams. All four survived and were as well as usual in four weeks. Another dog of eighteen pounds died five minutes after an injection of two drams, while another of fifteen pounds took one ounce and recovered.

The symptoms in the dogs were all alike, dyspnœa, increasing as the inflammation increased, until the accessory muscles of respiration were called into play. The stethoscope showed that air had great difficulty in entering the bronchi and air vesicles and also the tumultuous beating of the heart in pumping blood through the lung. It was impossible to take the temperatures. Post-mortem examinations showed the lungs dark, congested and solid in some places. The air passages were filled with frothy bloody mucus, even in the dog that died in five minutes. On section, the lungs were dark, congested, and full of bloody mucus. This shows how acutely sensitive the respiratory passages are to the action of alcohol. On microscopic examination of the lungs, the air tubes and vesicles were found filled with immense numbers of red and white corpuscles and much mucus. The same picture was presented as in a slide from the lungs of a broncho-pneumonic child. The striking similarity between the two is enough to prove that the pathological condition is the same and that alcohol has produced a lesion very closely resembling, if not absolutely like, that of broncho-pneumonia in the human subject. This to some extent explains why drunkards attacked by pneumonia succumb more readily than the temperate. The sensitive lung tissue is enveloped in alcohol—flowing through the capillaries of the lung on the one side, and exhaled, filling the air vesicles and tubes on the other. The condition must create a state of semi-engorgement or of mild inflammation, similar to the drunkard's red nose or his engorged gastric mucous membrane. Such a state will reduce the vitality of the pulmonary tissue and its power of resistance to external influences. Add to this an inflammation such as a pneumonia, and the lungs find themselves unable to withstand the pressure.

DR. ANDREWS, the genial representative of Reed & Carnrick, who so successfully introduced Peptonzyme to the profession of Topeka, is now explaining its virtues to the Fort Scott brothers.

THE Kaw Pharmacal Co., of Topeka, are preparing guaiacoline with animal nuclein in addition to the plain guaiacoline.

A reception will be given to the students and alumni of the Kansas Medical College on Friday evening March 22.

THE program for the next meeting of the Kansas Medical Society will soon be ready for publication.